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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,250	08/17/2001	Timothy T. Wenzel	1999U021D2.US	5104

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EXAMINER

PASTERCZYK, JAMES W

ART UNIT PAPER NUMBER

1755

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/932,250

Applicant(s)  
Wenzel et al.

Examiner  
J. Pasterczyk

Art Unit  
1755



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Aug 17, 2001
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 40-49 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 40-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 6) ☐ Other:

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1. Claims 40-49 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of making a catalyst comprising a metallocene dichloride with an alumoxane cocatalyst having a mixture of L-malic acid and potassium or calcium carbonate as the inhibitor mixture, does not reasonably provide enablement for other inhibitor mixtures or any other polymerization catalysts, e.g. chromium oxides, Ziegler-Natta catalysts, late transition metal carbene ROMP catalysts, late transition metal diimine catalysts, or others in combination with any other cocatalysts. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. The present claims are so broadly drawn as to read on an ordinary metallocene catalyst in combination with any cocatalyst mixed with two different solvents since the two different solvents would not necessarily react with each other. In addition, the present specification only discloses as actual working examples one metallocene dihalide in the presence of MAO, L-malic acid, and calcium or potassium carbonate in various mole ratios rather than any other possible combinations of these broadly functionally recited reagents. Other non-disclosed combinations are considered to be merely prophetic since the catalyst arts are known to be highly unpredictable, hence actual working examples would be necessary to adequately disclose and teach how to make and use the present invention commensurate in scope with these claims, which now amount to a mere invitation to experiment. Other polymerization catalysts would not be likely to function mechanistically the way metallocenes in combination with alumoxanes would, further illustrating the need for further

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working examples or great narrowing of the present claims. In addition, no examples wherein the two compounds are clearly only oxidant and reductant are disclosed; instead, all examples appear to be drawn to Bronsted acids and bases.

2. Claims 40-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40 is so broad and vague that it reads on making a catalyst by mixing titanium tetrachloride with an aluminum alkyl in the presence of two different hydrocarbon solvents. Some solvents currently used are even mixtures of many different hydrocarbon compounds having similar boiling points, hence even doing the mixing in e.g. Isopar<sup>TM</sup> may read on this. In the last line it is not clear toward what the first and second compounds are unreactive.

In claim 44, "the support" of the last line lacks antecedent basis, and --and-- should be inserted after "catalyst". Perhaps this claim should depend from claim 43.

In claim 45, it is again not clear toward what the first and second compounds are unreactive, and it is not clear what's polymerization temperature is being used as the baseline temperature.

In claim 46, it is not clear what makes two compounds of the same "type", hence that word should be deleted in l. 2.

In claims 48 and 49, change "functionality" to --functional group-- since the latter is clearly a noun while the former is an adjective. In claim 49 change "process" in l. 1 to --method--

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for consistency's sake, and "-O" has a missing valence, hence it is not clear just what atomic group is being referred to here. Is it an oxide? If so, then =O is appropriate. If an ether, then -O- is appropriate.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 40-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klein, USP 3,082,198 (hereafter referred to as Klein).

Klein discloses a method of making a catalyst comprising adding a carboxylic acid to water (which, being amphoteric is both Bronsted acidic and basic) along with additions of an aluminum alkyl and titanium tetrachloride (col. 1, l. 39-59; examples).

Klein lacks disclosure of the actual order of addition of these reagents.

However, from the examples it appears as if the catalyst is first made by adding the titanium and aluminum compounds, followed by the water in the monomer feed, then the acid to counteract the effects of the water on the polymerization process.

It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Klein with a reasonable expectation of obtaining a highly-useful method of making a

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catalyst composition with the expected benefit of the catalyst having less polymer buildup in the polymerization reactor.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is (703) 308-3497. The examiner can normally be reached on M-F from 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached on (703) 308-3823. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for normal faxes, 872-9311 for after final faxes.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Mark L. Bell  
Supervisory Patent Examiner  
Technology Center 1700



J. Pasterczyk

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8/11/03